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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,786	04/09/2004	Chandrakant D. Patel	200400612-1	8718

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EXAMINER
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BHAT, ADITYA S

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/820,786

Applicant(s)

PATEL ET AL.

Examiner

Aditya S. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12, 17-33 and 35-48 is/are rejected.
- 7) ☐ Claim(s) 6, 13-16 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/6/2006, 12/22/05</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of claims 1-48 in the reply filed on 1/17/2006 is acknowledged. The traversal is on the ground(s) that restriction was improper. Applicant's arguments are persuasive and the restriction requirement has been withdrawn.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-12, 17-19, 32-33 and 35-39 are rejected under 35 U.S.C.

102(e) as being anticipated by Friedrich et al. (USPUB 2003/0193777)

The applied reference has a common assignee & inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

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With regards to claim 1, Friedrich et al. (USPUB 2003/0193777) teaches a system for workload placement among data centers, said system comprising:

a plurality of grid resource allocation managers (GRAMs), wherein the GRAMs are configured to obtain information from the data centers; (figure 2) (Page 5, paragraph 0047)

an information service configured to receive information from the plurality of GRAMs; (figure 2) (Page 5, paragraph 0047)

a broker configured to receive an application request and to determine resource requirements from the application request, wherein the broker is configured to determine which of the data centers contains adequate resources to perform the requested application; (Page 5, paragraph 0048) and

a co-allocator configured to receive information pertaining to the data centers having the adequate resources, wherein the co-allocator is further configured to select one of the data centers to perform the requested application based upon energy efficiency characteristics of the data centers. (figure 2) (Page 5, paragraph 0047-0050)

With regards to claim 2, Friedrich et al. (USPUB 2003/0193777) teaches the GRAMs are configured to receive sensed data from their respective data centers. (Page 3, paragraph 0023)

With regards to claim 3, Friedrich et al. (USPUB 2003/0193777) teaches the sensed data comprises temperature measurements from locations in the data centers and locations outside of the data centers. (Page 3, paragraph 0023)

With regards to claim 4, Friedrich et al. (USPUB 2003/0193777) teaches the GRAMs are configured to determine a supply heat index of the data centers, wherein the information received by the information service from the GRAMs contains the supply heat indexes of the data centers. (Page 3, paragraph 0023)

With regards to claim 5, Friedrich et al. (USPUB 2003/0193777) teaches the GRAMs are further configured to determine supply heat indexes of the data centers under various anticipated loading conditions. (Page 3, paragraph 0023)

With regards to claim 7, Friedrich et al. (USPUB 2003/0193777) teaches the GRAMs are configured to determine the resources contained in the data centers, and wherein the information received by the information service from the GRAMs contains information pertaining to the resources contained in the data centers. (Page 3-4, paragraph 0031-0033)

With regards to claim 8, Friedrich et al. (USPUB 2003/0193777) teaches the resources comprise one or more of machines, storage devices, and processors, and wherein the determination of the resources further comprises determining current and scheduled workloads of the resources. (Page 4, paragraph 0034)

With regards to claim 9, Friedrich et al. (USPUB 2003/0193777) teaches the application request is in the form of a resource specification language, said resource specification language defining resource requirements for performance of the application. (Page 4, paragraph 0034)

With regards to claim 10, Friedrich et al. (USPUB 2003/0193777) teaches the broker is configured to identify one or more qualifying data centers having the

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adequate resources through a comparison of the resource requirements for performance of the application and information regarding the resources in the data centers received from the information service. (Page 4, paragraph 0036)

With regards to claim 11, Friedrich et al. (USPUB 2003/0193777) teaches the co-allocator is configured to receive the identities of the one or more qualifying data centers and to determine an energy efficiency coefficient of each of the qualifying data centers. (Pages 2- 3, paragraph 0021)

With regards to claim 12, Friedrich et al. (USPUB 2003/0193777) teaches the energy efficiency coefficient of a data center is based upon a supply heat index of the data center and a coefficient of performance of the data center, and wherein the co-allocator is configured to select the data center having the highest energy efficiency coefficient. (Page 4, paragraph 0032)

With regards to claim 17, Friedrich et al. (USPUB 2003/0193777) teaches the data centers are located in various geographically diverse locations. (Page 5, paragraph 0047)

With regards to claim 18, Friedrich et al. (USPUB 2003/0193777) teaches the various geographically diverse locations comprise at least one of different counties, states, countries and continents. (Page 5, paragraph 0047)

With regards to claim 19, Friedrich et al. (USPUB 2003/0193777) teaches the application request is in the form of a ground resource specification language, said ground resource specification language defining resource requirements for performance of the application, wherein the co-allocator is configured to receive the application request in the form of the ground resource

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specification language and wherein the co-allocator is further configured to select one of the data centers to perform the requested application based substantially upon a comparison between the resources defined in the ground resource specification language and the energy efficiency characteristics of the data centers. (Page 4, paragraphs 0032-0034)

With regards to claim 32, Friedrich et al. (USPUB 2003/0193777) teaches a system for workload placement among data centers, said data centers being associated with means for allocating resources, said system comprising:

means for registering information regarding available resources in the data centers received from the means for allocating resources of the data centers; (330;figure 2)

means for comparing the available resources to resources required for performing a requested application; (Page 5, Paragraphs 0048-0049)

means for communicating between the means for comparing and the means for allocating resources; (Page 5, Paragraphs 0047)

means for selecting one of the data centers to perform the application based upon energy efficiency characteristics of the data centers. (Page 5, Paragraphs 0048)

With regards to claim 33, Friedrich et al. (USPUB 2003/0193777) teaches the means for allocating resources comprises means for detecting one or more environmental conditions, means for calculating a heat index, means for determining resources available in the data centers, and means for

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communicating between the means for allocating resources and the means for registering information. (Page 5, Paragraphs 0048)

With regards to claim 34, Friedrich et al. (USPUB 2003/0193777) teaches the means for allocating resources comprises means for calculating supply heat indexes of the data centers, means for determining coefficient of performances of the data centers, and means for calculating energy efficiency coefficients of the data centers, wherein the means for selecting one of the data centers comprises means for selecting the data center having the highest energy efficiency coefficient. (Page 5, Paragraphs 0048)

With regards to claim 37, Friedrich et al. (USPUB 2003/0193777) teaches means for calculating energy efficiency coefficients of the data centers comprises means for calculating energy efficiency coefficients of the data centers based upon anticipated thermal characteristics of the data centers if the application were performed by the data centers; and wherein the for selecting one of the data centers to perform the application based upon energy efficiency characteristics of the data centers further comprises means for selecting the data center having the highest energy efficiency coefficient while performing the application. (Page 6, Paragraphs 0053-0054)

With regards to claim 38, Friedrich et al. (USPUB 2003/0193777) teaches the means for comparing the available resources to resources required for performing a requested application comprises a broker. (330; figure 2)

With regards to claim 39 Friedrich et al. (USPUB 2003/0193777) teaches the means for comparing the available resources to resources required for



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performing a requested application comprises a co-allocator. (Page 5, Paragraphs 0048)

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

With regards to claims 20-31 and 40-48 the methods recited in the claimed invention do not produce a real life, real world, useful, concrete, and tangible result.

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459. Nor can one patent "a novel and useful mathematical formula," Flook, 437

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U.S. at 585, 198 USPQ at 195; electromagnetism or steam power, O'Reilly v. Morse, 56 U.S. (15 How.) 62, 113-114 (1853);

Please view the following guidelines to overcome 35 U.S.C. 101 rejection made in this office action.

<http://www.uspto.gov/web/offices/com/sol/oq/2005/week47/patgupa.htm>

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter: Claims 6, 13-16 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 6, 13 and 34:

The primary reason for the allowance of claim 6 is the inclusion of: the sensed data comprises relative humidity measurements from locations outside of the data centers, and wherein the co-allocator is further configured to consider the relative humidity measurements around the data centers in selecting a data center. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

The primary reason for the allowance of claim 13 is the inclusion of: the energy efficiency equations as defined in claim 13. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

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The primary reason for the allowance of claim 34 is the inclusion of: obtaining relative humidity measurements around the data centers; and wherein the means for selecting one of the data centers to perform the application based upon energy efficiency characteristics of the data centers further comprises means for factoring the relative humidity measurements in selecting one of the data centers. It is this feature found in the claim, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Claims 14-16 are allowed due to their dependency on claim 13.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bash et al. (USPUB 2004/0240514) teaches an air recirculation index.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S. Bhat whose telephone number is 571-272-2270. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aditya Bhat  
April 11, 2006

BRYAN BUI  
PRIMARY EXAMINER

